NEW YORK INDEPENDENT SYSTEM OPERATOR
10 Krey Boulevard ♦ Rensselaer, NY 12144

March 20, 2017

By Electronic Delivery

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: *New York Independent System Operator, Inc.*, Docket ER08-1281-000; Fourth Broader Regional Markets Informational Report

Dear Ms. Bose:

In accordance with paragraph 33 and ordering paragraph "D" of the Federal Energy Regulatory Commission's ("Commission's" or "FERC's") December 30, 2010 *Order on Rehearing and Compliance* in Docket No. ER08-1281 ("December 2010 Order") and the Commission's June 2, 2014 order[1] modifying the reporting requirement from a semiannual to an annual obligation, the New York Independent System Operator, Inc. ("NYISO") hereby submits this fourth *Broader Regional Markets Informational Report* ("Report"). Ordering paragraph "D" of the December 2010 Order states that the "RTO/ISO parties are hereby directed to submit informational reports, as discussed in the body of this order." **In footnote 35 of its December 2010 Order the Commission stated that it does not intend to issue a public notice or an order on this informational Report.**

Paragraph 33 of the December 2010 Order instructs the NYISO:

> "in collaboration with its neighboring RTO/ISOs, NERC and other market participants, to submit a report, as an information filing, addressing (i) the effects of the reforms on reducing congestion that results from loop flows and the costs associated with mitigating congestion; (ii) the effects of the implementation of the enhanced interregional transaction coordination initiative; and (iii) recommendations and analyses as to whether the buy-through

[1] *New York Independent System Operator, Inc.*, 133 FERC ¶ 61,276 (2010) and *New York Independent System Operator, Inc.*, 147 FERC ¶ 61,175 (2014).

> congestion proposal is required, and if so, when it should be implemented.[35]"
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> [35] These reports will be for informational purposes only. They will not be noticed and the Commission does not intend to act on them.

While the NYISO is responsible for submitting this informational Report to the Commission, the contents of the Report were developed through collaboration between and among PJM Interconnection, LLC ("PJM"), the Midcontinent Independent System Operator, Inc. ("MISO"), the Ontario Independent Electricity System Operator ("IESO") and the NYISO (collectively the "Lake Erie ISOs and RTOs"), with input from the North American Electric Reliability Corporation ("NERC").

I. Market Design and Physical Improvements

A. Market Design Improvements the ISOs/RTOs Have Completed

The Lake Erie ISOs and RTOs present the following summary of the market design features that have been implemented to improve coordination between markets and reduce Lake Erie loop flow.

1. PJM/NYISO Market-to-Market Implementation

The Commission authorized the NYISO and PJM to begin coordinated congestion management/market-to-market coordination ("M2M") in January 2013.[2] The M2M coordinated congestion management process allows transmission constraints that are significantly impacted by generation dispatch changes in both the NYISO and PJM markets, or by the operation of the Ramapo Phase Angle Regulators ("PARs"), to be jointly managed in the real-time securityconstrained economic dispatch models of both RTOs.[3] This joint real-time management of transmission constraints near the market borders provides a more efficient and lower cost transmission congestion management solution, and facilitates price convergence at the market boundaries. Real-time coordination results in a more efficient economic dispatch solution to manage the real-time transmission constraints that impact both markets.

The M2M coordination process has provided NYISO and PJM a set of very effective tools to assist their management of congestion caused by unscheduled power flows including Lake Erie loop flow. During 2016, the NYISO estimated that the value to New York of M2M

[2] *New York Independent System Operator, Inc.*, 138 FERC ¶ 61,192 (2012).

[3] NYISO/PJM M2M includes two types of coordination: (1) re-dispatch coordination; and (2) Ramapo PAR coordination. For re-dispatch coordination, the non-monitoring RTO re-dispatches its generation to help manage congestion in the monitoring RTO, when economic, if one of the pre-defined flowgates becomes congested in the monitoring RTO. For Ramapo PAR coordination, the Ramapo PARs are operated to reduce overall congestion if certain pre-defined flowgates become congested in one or both RTOs.

coordination was $20.7M.[4] The estimate represents the value New York realizes from Ramapo PAR coordination. This includes (1) the estimated savings to NYISO for additional deliveries into New York, and (2) PJM compensation to NYISO for additional deliveries into PJM (as compared to the Ramapo Target Value,[5] excluding service to Rockland Electric Company load ("RECo Load")). The identified value is net of any settlements to PJM when PJM's transmission system is congested.

2. Implementation of More Frequent Scheduling

Enhanced Interregional Transaction Coordination permits the scheduling of inter-Balancing Authority transactions on a more frequent basis than hourly schedules.[6] The NYISO continues to work with Hydro-Quebec to evaluate the feasibility of 5-minute scheduling.

3. PJM/NYISO Coordinated Transaction Scheduling

The NYISO and PJM implemented Coordinated Transaction Scheduling ("CTS") on November 4, 2014 at all four of the Proxy Generator Buses that represent the interconnections between their two areas where interchange can be scheduled. CTS enables market participants to access the least-cost source of power within the two regions and helps lower the combined energy production cost of the two systems. CTS enables PJM and the NYISO to more efficiently use the transmission lines connecting the two regions. The scheduling system also minimizes counterintuitive power flows by explicitly incorporating projected price differences between the two markets into interregional scheduling decisions.

4. PJM/MISO Coordinated Transaction Scheduling

As part of the MISO-PJM Joint and Common Market ("JCM") effort, PJM and MISO have developed a CTS design to achieve more optimal coordination of interchange in real time across the MISO-PJM interface. On December 15, 2015, PJM and MISO submitted a filing to revise the Joint Operating Agreement between MISO and PJM ("PJM-MISO JOA") and their respective governing tariffs to implement CTS.[7] In an order dated April 18, 2016, the Commission accepted the revisions, subject to condition, effective March 1, 2017. However, on February 3, 2017, PJM and MISO filed a joint request to change the effective date for the implementation of CTS as between them from March 1, 2017 to October 3, 2017 due to PJM's need to accommodate the timing of other PJM market system enhancements and training, and

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[4] http://www.nyiso.com/public/webdocs/markets_operations/committees/mc/meeting_materials/2017-01-25/Operations_Report.pdf.

[5] The Ramapo Target Value is defined in the NYISO/PJM Joint Operating Agreement, Schedule D, Section 7.2.1. The Ramapo Target Value is based on the net interchange schedule between the NYISO and PJM plus the deviation of actual flows and desired flows across the ABC and JK interfaces.

[6] *New York Independent System Operator, Inc.*, 134 FERC ¶ 61,186 (2011).

[7] *See PJM Interconnection, L.L.C.*, Docket No. ER16-535-000, *et al.* (December 15, 2015); *see also Midcontinent Independent System Operator, Inc.*, Docket No. ER16-533-000, *et al.* (December 15, 2015) ("MISO CTS Filing").

asked the Commission to issue an order accepting the change to the effective date by no later than April 4, 2017. MISO and PJM are coordinating closely and are currently on track for development of the necessary software and procedures changes.

B. Ontario-Michigan (ONT-MI) Interface PARs

As of April 5, 2012, all four circuits comprising the Michigan/Ontario interconnection had in-service PARs. Starting on that date, the MISO and IESO began actively operating the PARs to better conform actual power flows to scheduled power flows. The expectation was that such operations, in conjunction with controls already operational elsewhere on the system, would help reduce the unscheduled flows which cause Lake Erie Circulation ("LEC").

In January 2017, MISO, PJM, NYISO, and IESO completed the follow-up study (Second Study) that was recommended in the Regional Power Control Device Coordination Study report published in 2011.[8] The Second Study was necessary to complete the objectives contemplated in this Docket. The Second Study reviewed the operation of the Ontario-Michigan PARs and their ability to manage LEC over the period of January 2015 through December 2015.[9] LEC was found to be within the +/- 200 MW control band 76.6% of the year.

II. The Lake Erie ISOs and RTOs Agree That Implementing Buy-Through is Not Necessary at This Time

In early 2016, the Lake Erie ISOs and RTOs decided not to pursue the Buy-Through of Congestion Broader Regional Market solution at this time, as discussed in the third Broader Regional Markets Informational Report submitted in this Docket. The collective set of market solutions discussed herein, and in the prior reports submitted in this docket, has generally resulted in decreased loop flows around Lake Erie. In addition, the cost of generating electricity (which is relevant to the value of alleviating incremental transmission congestion) is low and may remain that way for some time. If the Lake Erie ISOs and RTOs determine that the Buy-Through of Congestion Broader Regional Market solution becomes necessary in the future, a new proceeding will be initiated to present a proposal for the Commission's consideration.

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[8] Broader Regional Markets, Regional Power Control Device Coordination Study (IESO, MISO, NYISO, PJM), dated June 1, 2011, is posted at https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing478/Attachments/188-%20NYISO_Rgnl_Pwr_Cntrl_PARs_Filing_8_26_2011.pdf.

[9] Ontario-Michigan Interface PAR Performance Evaluation Report ("Second Study"), dated January 16, 2017, is posted at http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-02-28/2016%20Ontario-Michigan%20Interface%20PAR%20Evaluation%20Final%20Report.pdf.

III. Annual Reporting Obligations are Fulfilled

The Lake Erie ISOs and RTOs have fully implemented the interface pricing and congestion management/market-to-market coordination initiatives contemplated in this Docket.[10] The decision that Buy-Through of Congestion is not necessary at this time and the completion of the Second Study discussed above conclude the last outstanding items. Therefore, the NYISO, with the support of PJM, MISO and IESO, will separately submit a request to the Commission to terminate the annual reporting obligation in this Docket.

IV. Communications and Correspondence

All communications and service in this proceeding should be directed to:

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V. Service

The NYISO will send an electronic link to this filing to the official representative of each party to this proceeding, to the official representative of each of its customers, to each participant on its stakeholder committees, to the New York Public Service Commission, and to the New Jersey Board of Public Utilities. In addition, the complete filing will be posted on the NYISO's website at www.nyiso.com.

[10] *See* December 2010 Order at fn 29 ("The Commission does not have jurisdiction over IESO. We note, however, that IESO has been an active participant in these proceedings and we appreciate IESO's commitment to resolving the loop flow issues addressed in this order. We direct the NYISO, the Midwest ISO and PJM to continue to work with IESO to develop a comprehensive resolution to the Lake Erie loop flow problem.").

VI. Conclusion

The NYISO respectfully requests that the Commission accept this Report as satisfying the requirements set forth in the Commission's December 2010 Order, as modified in the June 2014 Order.

Respectfully submitted,

/s/ Alex M. Schnell
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